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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,790	12/21/2005	Hiroki Nakamura	283682US0PCT	4348

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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02/08/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/561,790	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Olga Asinovsky	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>11/06/2007</u> . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-5, 9, 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ilenda et al U.S. Patent 4,957,974.

Ilenda discloses graft copolymer by grafting a methacrylate monomer onto a non-polar polyolefin. The non-polar polyolefins include LDPE, HDPE, LLDPE, EPDM, polypropylene, ethylene-vinyl acetate copolymer, ethylene-methyl (meth)acrylate copolymers, column 6, line 63 through column 7, line 25, for the present claims 1, 9 and 12, for being a polyolefin resin (A). The molecular weight of the polyolefin polymer is between 50,000 and preferably to 200,000, column 7, line 40, for the present claim 20. The preferred grafted monomer is methyl methacrylate and/or cycloalkyl methacrylates such as cyclohexyl methacrylate, column 7, lines 52-57, for the present claims 1, 4, 13 and 14. In addition, hydroxyethyl methacrylate, hydroxypropyl methacrylate is added in the amount of up to 20%, column 7, lines 62-63, for the present claims 5, 15-17. The present claim 1 is open to any chemical formulation for a polyolefin backbone resin (A). The non-polar polyolefin backbone resin does not contain chlorine moiety, see example 1 at column 15, for the present claim 11. The grafted methacrylic ester in Ilenda invention is readable in the claimed (b) monomer. The claimed (meth)acrylate

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monomer (b) in which an acryloyloxy group or methacryloyloxy group is bonded to a secondary carbon atom is within the scope of the same chemical structure of the alkyl(meth)acrylate monomers in Ilenda invention.

There is no evidence in Ilenda invention that the grafted monomers contain chlorine moiety, for the present claim 18. The ratio of the grafted methacrylate chain polymer to the polyolefin backbone resin is from 1:9 to 4:1, column 46, line 66. The amount of grafted (meth)acrylate monomer is readable in the present claim 19. The graft-modified polyolefin can be blended with other polyolefin such as polypropylene, column 16, line 22. The claimed invention is fully anticipated by the disclosure in Ilenda invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-5, 9, 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ilenda et al U.S. Patent 4,957,974.

All discussion in the paragraph 2 above are adequately set here.

Ilenda discloses graft copolymer by grafting a methacrylate monomer onto a non-polar polyolefin. The non-polar polyolefins include LDPE, HDPE, LLDPE, EPDM, polypropylene, ethylene-vinyl acetate copolymer, ethylene-methyl (meth)acrylate copolymers, column 6, line 63 through column 7, line 25, for the present claims 1, 9 and

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12, for being a polyolefin resin (A). The molecular weight of the polyolefin polymer is between 50,000 and preferably to 200,000, column 7, line 40, for the present claim 20. The preferred grafted monomer is methyl methacrylate and/or cycloalkyl methacrylates such as cyclohexyl methacrylate, column 7, lines 52-57, for the present claims 1, 4, 13 and 14. In addition, hydroxyethyl methacrylate, hydroxypropyl methacrylate is added in the amount of up to 20%, column 7, lines 62-63, for the present claims 5, 15-17. The present claim 1 is open to any chemical formulation for a polyolefin backbone resin (A). The non-polar polyolefin backbone resin does not contain chlorine moiety, see example 1 at column 15, for the present claim 11, wherein the non-polar polyolefin is polypropylene. However, the non-polar polyolefin backbone resin can include minor amount of 1-alkenes, vinyl esters, vinyl chloride, (meth)acrylic ester and (meth)acrylic acid, claim 1 at column 46. The minor amount of vinyl chloride can be substituted with 1-alkenes or (meth)acrylic ester as an alternative choice, and it is within the skill of the worker in the art, for the present claim 11. There is no evidence in Ilenda invention that the grafted monomers contain chlorine moiety, for the present claim 18. The ratio of the grafted methacrylate chain polymer to the polyolefin backbone resin is from 1:9 to 4:1, column 46, line 66. The amount of grafted (meth)acrylate monomer is readable in the present claim 19. The graft copolymer has adhesive property, column 11, lines 23 and 28-29, for the present claim 21, because the graft-modified polyolefin can be used for hot melt adhesive, column 11, lines 22-23. The claimed (meth)acrylate monomer (b) in which an acryloyloxy group or methacryloyloxy group is bonded to a secondary carbon atom is within the scope of the same chemical structure of the alkyl(meth)acrylate

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monomers in Ilenda invention. The graft-modified polyolefin can be blended with other polyolefin such as polypropylene, column 16, line 22.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a graft polymerization process in Ilenda invention wherein the minor amount of vinyl chlorine moiety in a non-polar polyolefin backbone is substituted with vinyl ester or (meth)acrylic ester as an alternative replacing component for environmental protective policy.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a graft polymerization process in Ilenda invention wherein the grafted monomer such as acrylic acid is excluded in Ilenda for the purposes to reduce the devolatilization and purification step for producing grafted polyolefin resin.

5. Claims 1-2, 4-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ilenda et al U.S. Patent 4,957,974 in view of Usui et al U.S. Patent 6,800,688.

6. Usui' 688 has been discussed in the previously mailed office action on 08/23/2007. All discussions are adequately set here.

7. Argument is that Usui discloses unsaturated polycarboxylic acid, column 3, line 13. However, the unsaturated carboxylic acid can be substituted with its derivative such as ester, column 3, line 14 and column 4, line 41.

8. Usui'688 discloses using the graft modified polyolefin resin for an adhesive, a primer or a paint, or an ink containing modified polyolefin resin, column 3, lines 39-49. Ilenda and Usui disclose analogous graft modified polyolefin resin.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to use a graft polymerization process in Ilenda invention for producing a grafted polyolefin having adhesive property and the resulting modified polyolefin resin is used as adhesive or primer, or paint composition, or for ink formulation as evidence in Usui invention, since the analogous composition can be used for the same utilities. *In re Spada*, 15 USPQ 2nd 1655 (Fed.Cir. 1990), stating that the products of identical chemical composition cannot have mutually exclusive properties.

In light of the amendment of 11/21/2007 and present new claims, the search has been updated. This action is not final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Olga Asinovsky
Examiner
Art Unit 1796

O.A.
February 01, 2008


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700